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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,476	10/27/2003	E. H. Kelle Zeiher	7594-CO1	4279

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Kelly L. Cummings
Patent & Licensing Department
Ondeo Nalco Company
Ondeo Nalco Center
Naperville, IL 60563-1198

EXAMINER	
DRODGE, JOSEPH W	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,476	ZEIHER ET AL.	
	Examiner	Art Unit	
	Joseph W. Drodge	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-29 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1003.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 6-19 and 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoots et al patent 5,435,969 in view of Hoots patent 5,171,450 and Zeiher et al patent 6,017,459.

Hoots et al disclose a system for treating industrial process effluent water using membranes to purify with monitoring of chemical and performance operational parameters and concentration of chemical species including chemicals added to treat scaling, fouling and other conditions (see column 8, lines 10-30 and column 12, line 1-column 13, line 16), [as required in claims 2, 16, 24, 25, and 27-29]. The monitoring is accomplished by steps including fluorometrically monitoring amounts of inert fluorescent tracers added with chemical agents (column 4, lines 3-60) that are sensitive to the ppb to ppm ranges (column 16, lines 51-64); [as required in claims 13-15]

. The monitoring is aided by means for controlling and regulating of water chemistry and chemical additions (see column 5, lines 68-column 6, line 12). Hoots et al additionally disclose that the monitoring and control system is applicable to many other water treatment systems including cooling tower recirculation systems.

Each of the independent claims 1, 17, 23 and 26 differs from '969 in requiring that levels of tagged fluorescent agents be monitored concurrently with the fluorescent

tracers. Hoots '450 teaches controlled chemical treatment of cooling tower industrial systems and monitoring of both fluorescent tracers and tagged agents (column 3, lines 12-48, especially lines 36-42) including comparison and correlation of tracer and tagged agent concentrations. At the time the present invention was made, it would have been obvious to one of ordinary skill in this art to have
augmented the '969 system by monitoring tagged fluorescent agents in addition to fluorescent tracers, as suggested by Hoots '450, in order to more readily determine total system chemical polymer demand factoring in changing water chemistries and thus achieve a more accurate control of chemical addition operations.

The claims also all differ in requiring that the particular membranes employed and monitored be reverse osmosis type membranes. Zeiher et al teach to use reverse osmosis membranes to remove solutes from varied types of industrial process water to form permeate and concentrate streams (column 1, lines 9-47, etc.). Zeiher et al also teach processes utilizing reverse osmosis membranes benefiting from process monitoring, especially utilizing optical type monitoring methods, to control membrane fouling, scaling and degradation by controlled addition of chemicals (column 2, lines 17-39 and 47-62; column 3, line 54-column 4, line 19; column 6, lines 20-38, etc.). It would have also been obvious to one of ordinary skill in the art to have utilized reverse osmosis type membranes in the process of Hoots et al '969, since this type membrane results in more complete removal of smaller size solutes from the industrial water and

thus higher purity product water and is readily adaptable to process control employing optical methods that enable prompt identification of source or cause of membrane degradation.

Regarding specific tracers cited in claims 6-8 and 21, see column 39, lines 18-49 of Hoots et al '969.

Regarding specific tagged fluorescent agents cited in claims 9-12 and 22, see Hoots '450 in column 3, lines 48-66, etc.

4. Claims 3-5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoots et al '969 in view of Hoots '450 as applied to claims 1 and 17 above, and further in view of Al-Samadi patent 6,113,797.

4. Regarding claims 3-5 and 20, Zeiher et al also suggest cross-flow or dead-end flow type configurations in discussion of set-up of a monitoring membrane in column 3, lines 54-59 and column 5, lines 7-13.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of copending Application No. 10/109,260. Although the conflicting claims are not identical, they are not patentably distinct from each other because instant claims only differ from the claims of '260, in more broadly reciting the steps of providing a fluorometer and wherein the fluorometer is used, the claims of the 2 applications overlapping in this regard.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

March 5, 2004

Joseph Drodge

JOSEPH DRODGE
PRIMARY EXAMINER